

2004 Research Fellows

On February 23, 2004, the Clay Mathematics Institute announced the appointment of four Research Fellows: Ciprian Manolescu and Maryam Mirzakhani of Harvard University, and András Vasy and Akshay Venkatesh of MIT. These outstanding mathematicians were selected for their research achievements and their potential to make significant future contributions.

Ciprian Manolescu Ciprian Manolescu (b. 1978), a native of Romania, is completing his Ph.D. at Harvard University under the direction of Peter B. Kronheimer. In his undergraduate thesis he gave an elegant new construction of Seiberg-Witten Floer homology, and in his Ph.D. thesis he gave a remarkable gluing formula for the Bauer-Furuta invariants of four-manifolds. His research interests span the areas of gauge theory, low-dimensional topology, symplectic geometry and algebraic topology. Manolescu will begin his four-year appointment as a Research Fellow at Princeton University beginning July 1, 2004.

Maryam Mirzakhani Maryam Mirzakhani (b. 1977), a native of Iran, is completing her Ph.D. at Harvard under the direction of Curtis T. McMullen. In her thesis she showed how to compute the Weil-Petersson volume of the moduli space of bordered Riemann surfaces. Her research interests include Teichmüller theory, hyperbolic geometry, ergodic theory and symplectic geometry. As a high school student, Mirzakhani entered and won the International Mathematical Olympiad on two occasions (in 1994 and 1995). Mirzakhani will conduct her research at Princeton University at the start of her four-year appointment as a Research Fellow beginning July 1, 2004.

András Vasy András Vasy (b. 1969), a native of Hungary, received his Ph.D. from MIT in June 1997 under the direction of Richard B. Melrose. Vasy is currently an associate professor at MIT. The focus of his research program is scattering theory, specifically the theory of N-body quantum Hamiltonians. Vasy has proved several deep results in this field concerning the structure of the scattering matrix and asymptotic behaviour of generalized eigenfunctions. More recently he has extended these techniques to study analysis on symmetric spaces. In 2002, he received an Alfred P. Sloan Research Fellowship. Vasy intends to work at Northwestern University and MIT during his two-year appointment as a Research Fellow beginning July 1, 2004.

Akshay Venkatesh Akshay Venkatesh (b. 1981) was born in New Delhi, India, and raised in Australia, where he attended the University of Western Australia in Perth. In 2002, he received his Ph.D. from Princeton University, where he worked under the direction of Peter Sarnak. Since that time he has held an C.L.E. Moore Instructorship at MIT. Venkatesh has made major progress in counting and equidistribution problems in automorphic forms and number theory. His research areas include representation theory, number theory, locally symmetric spaces, and ergodic theory. Venkatesh has chosen to carry out his research at the Courant Institute of Mathematical Sciences during his two-year appointment as a Research Fellow beginning September 1, 2004.

The above mathematicians join the current Clay Research Fellows: Manjul Bhargava (Princeton University), Daniel Biss (University of Chicago), Alexei Borodin (Caltech), Maria Chudnovsky (Princeton University), Dennis Gaitsgory (University of Chicago), Sergei Gukov (Harvard University), Elon Lindenstrauss (Courant Institute of Mathematics), Mircea Mustata (Harvard University), Igor Rodnianski (Princeton University), and Terence Tao (UCLA).